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Streptomyces of D50051
D50051.1 GI:
                                                                               Streptomyces griseus
Streptomyces griseus
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
                              Cloning and characterization of a gene involve sporulation and cell division of Streptomyces Actinomycetol. 9, 136-151 (1995)
                                                               Kawamoto, S.
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PLVAFLDRIDKLVPLGQEHTLGDFDGNLEDALGR"
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                   acggcaccgctggtggcgttcctcgaccggacggacaagctcgtgccgctcggccaggag
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438; Conser
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Cloning and characterization of a gene cell division of Streptomyces griseus unpublished (1995)
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Expression analysis of the ssgA gene product, associated wit
sporulation and cell division in Streptomyces griseus
Microbiology (Reading, England) 143 (Pt 4), 1077-1086 (1997)
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GRELLLDGLNSPSGDGDVHIGPTEPEGLGDVHIRLQVGADRALFRAGTAPLVAFLDRT
GRELLLOGEHTLGDFDGNLEDALGRILAEEQNAG"
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ggcgcggaccgtgcgctgttccgggcggggacggcaccgctggtggcgttcctcgaccgg
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Patent: WO 0000613-A 3 06-JAN-2000;
UNIV LEIDEN (NL); KRAAL BAREND (NL);
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Kraal, B., Luiten, R.
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/db_xref="taxon:1911"
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                                   SSGA.
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"Cloning and sequencing of the Streptomyces netropsis ssgA
"Cloning and sequencing of the EMBL/GenBank/DDBJ databases.
Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF195772; AAG28483.1; -
SEQUENCE 145 AA; 15838 MW; 92ACOF3ODF3D2620 CRC64;
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"Cloning and sequencing of the Streptomyces goldeniensis submitted (CCT-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF195770; AAG28481.1;
SEQUENCE 135 AA; 14843 MW; 32006CC86BDE4ED6 CRC64;
                                                                                                                                                                                                                 "A set of ordered cosmids and a detailed genetic the 8 mb Streptomyces coelicolor A3(2) chromosome Mol. Microbiol. 21:77-96(1996).
EMBL; AL096823; CAB46964.1; -.
SEQUENCE 136 AA; 14920 MW; 4B67CIF1E0BECC88 C
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NCBI_TaxID=121022;
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MEDLINE-97000351; PubMed-8843436;
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Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
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NCBI_TaxID=1902;
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P., Rousseau C
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12; Mismatches
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VHIGPTEPEGLGDVHIRLQVGADRALFRAGTAPLVAFLDRTDKLVPLGQEHTLGDFDGNL 120

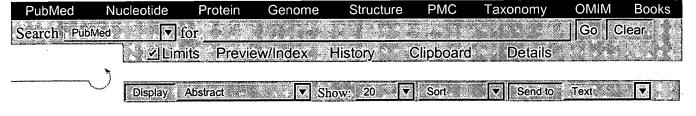
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1: Microbiology. 1997 Apr;143 (Pt 4):1077-86.

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Expression analysis of the ssgA gene product, associated with sporulation and cell division in Streptomyces griseus.

Kawamoto S, Watanabe H, Hesketh A, Ensign JC, Ochi K.

PubMed Services

National Food Research Institute, Ibaraki, Japan. taishi@ss.nfri.affrc.go.jp

The ssgA gene of Streptomyces griseus B2682, when present in high copy number, results in both suppression of sporulation and fragmented growth of mycelia. Western analysis with polyclonal antibodies against the gene product (SsgA) revealed a close correlation between SsgA accumulation and the onset of sporulation in wild-type cells. The protein was only detected in the cytoplasm. Certain developmental mutants of S. griseus (afs, reIC and brgA) which are defective in aerial mycelium formation in solid culture and submerged spore formation in liquid culture failed to accumulate SsgA. The SsgA protein appeared shortly (1 h) after nutritional shift-down of strain B2682 cells, afs mutant cells sporulated and expressed SsgA only when A-factor was present both before and after nutritional shift-down. Introduction of the ssgA gene in a low-copy-number vector into strain B2682 resulted in fivefold overexpression of SsgA, and was accompanied by fragmented growth of mycelia and suppression of submerged spore formation (in liquid culture) and aerial mycelium formation (in solid culture). Streptomycin production was not inhibited. In a control experiment, a nonfunctional ssgA gene possessing a frameshift mutation near its N-terminus had no effect on either growth or sporulation. It is proposed that the ssgA gene product plays a role in promoting the developmental process of S. griseus.

Related Resources

PMID: 9141673 [PubMed - indexed for MEDLINE]

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part : INTEGRAL b. Law. Designating ital laws and principles of a government f or designating carbon compounds:

The chemistry of carbon compounds to z'm) n. 1. The theory that all diseases alterations of organs. 2. The theory that an organism, rather than the functioning e principal or exclusive determinanting oncept that society is analogous to all 'i-cist D.

) n. 1. A plant or animal < microse garded as analogous to a living body com-is mal (-nīz'məl), or gan is mic wil

One who plays the organ. ni-za'shən) n. 1. An act or instance of of being organized. 2. The state or main loose organization of political interest ganized or made into an ordered who elements with varied functions that on to collective functions : ORGANISM oups having specific responsibilities and pose. -or gan i za'tion al adi -or

-ized, -iz-ing, -iz-es. [ME organize at. organum, instrument < Gk. organ semble into an orderly, structured fine e a coherent form to: SYSTEMATIZE COM compose in a desired pattern or structu nized about a young reaper enjoying Carlos Williams > 3. To manage or arrange or harmonious action corganize an organization corganize a politic employees) to form or join a labor union rees of (a business or industry) to format a steel mill> -vi. 1. To develop into ire. 2. a. To form a group, as a laborum or'gan-iz'er n.

ef. [ME < Med. Lat. organum, organidik -see ORGAN.] 1. Organ <organother

ɔr-gan'ə-klor'en', -ın, -klor'-) n. Any olandes, as DDT, that contain chlorine tē) n. [After Alfonso Corti (1822-1888)] ited on the inner surface of the basilar me at contains a series of sensory receptors

r'gə-nō-jĕn'i-sis, ôr-găn'ə-) n., pl. -es 🔃 t of biological organs. -or gan ogen ro-ge-net'i-cal-ly adv. 'ga-nog'ra-fe) n. Scientific description dis imals. -or'gan o graph'ic adj. -or

33-nő-lép'tik, ôr-gán'3-) adi. [Fr. organa] Lat. organum, implement < Gk. organa] < lambanein, to take.] Relating to week in .-or'gan-o-lep'ti-cal-ly adv.

nol'a-je) n. Study of the structure and ial organs. —or gan o log'ic (organia) 'i-cal adi. al (ôr-gan'ô-mər-kyoor'ê-əl) n. An

also organum (-nəm) n., pl. -na et of methods or principles used in stigation.

(ôr'ga-nō-thèr'a-pē, ôr-găn'ō-) n. Treath gans or extracts such as thyroxin and institute

'tic (-ther'a-pyoo'tik) adi. (ôr'gə-nöt'rə-piz'əm) also organotro n of a chemical compound or a micro
tissues or organs. —organotropic

is (organ-pip') n. A tall cactus, Paching Mexico and the southwestern United

dal point. m) n., pl. -na (-na) or -nums. [Med GAN.] Vocal polyphonic music of the three, or four voice parts.

im) n. var. of ORGANON. n. [Orig. unknown.] A sheer, stiff,

for trimming, neckwear, or evening zēn') n. [Fr. organsin < Ital. organzino] as a warp thread.

e afather epet ebe hwwhich ō toe ô paw, for oi noise

(or gaz am), n., [Fr. orgasme < Gk. orgasmos < organ, to (organ to be excited.) The climax of sexual excitement, marked specific placellation of semen by the male and by the release of semen by the male and by the release of the control of the minuscence in erectile organs of both sexes. —orgas'mic (ôr gaz'-

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(B) (Grie) IL, pl. -gies. [< orgies, secret rites < OFr. < Lat. orgia < (k) A secret rite in the cults of ancient Greek or Roman deities, (2) 1. A secretary in the desired of anticip, involving frenzied dancing, singing, drinking, and sexual prically, involving unrestrained indulgence, esp. sexual activity. 2. A revel involving unrestrained indulgence, esp. sexual activity. inity 3. Excessive indulgence in a specific activity (an orgy of

oribi (0,00 be or) n. pl. oribi or oribia. [Afr. < Hottentot arab arting Arr. < Hottentot arab at to provide with strips + -b, masc houn-forming suffix] A auditorownish African antelope, Ourebia ourebia:

oriel (ôreal, ôr) n. [ME < Med, Lat. oriolum, porch.] A projectones (or sant, ent', or') n. [ME < OFr. < Lat. oriens, rising sun, est pr parts of oriri, to rise] 1. The east, 2 Orient. a. The counmis of Asia; esp. of eastern Asia. b. Archaic The territories east of the Mediterranean 3. a. The luster characteristic of a pearl of high the membrane and the public based on the publi theic Rising in the sky : ASCENDING .- v. (ôr'e-ent'; or'-) enting: entirevt. 1. To place or locate in a specified relation to the points of the compass corient the windows toward the south To place or locate so as to face the east. b. To build (a church) with the nave laid out west to east and the altar at the eastern end. 1. To align or position relative to a reference system. 4. To determine the bearings of corient oneself by using a map > 5. To cause to become familiar with or adjusted to a situation or circumstance content a new employee to company policy > -vi. 1. To turn myard the east 2 To become adjusted or aligned.

orien tal (or'e en'tl, or'-) adj. 1. Eastern. 2. often Oriental. Relatint to the countries or regions of the Orient or to their peoples, languages, of culture ... 3. Oriental Ecol. Of or designating the mographic region that includes tropical Asia and the adjacent islands of the Malay Archipelago: 4. Lustrous and valuable (an oriental pail > 5. Designating precious varieties of corundum < an oriental orien'tality adv

Orien tal ism also orien tal ism (ôr ē en'tl-iz'sm, ôr'-) n. LA quality or custom peculiar to or characteristic of the Orient. Scholarly knowledge of eastern cultures, languages, and peoples: O'rien'tal ist n

Orien tal ize also orien tal ize (ôr e en'tl-iz', ôr.-) v. -ized, sping dzesvt. To give an Oriental character or appearance to: vi To become Oriental

riental poppy n. A plant, Papaver orientale, orig. of the Medimanean region, widely cultivated for its brilliant scarlet and black

Oriental rug n. A rug made by hand in the Orient.

rientate (ôreën-tat, -on-, ōr-) vt. & vi. -tat-ed, -tat-ing, tetes. To orient. orientation (or e-en-ta'shan, on-, or-) n. 1. An act of orienting

I the state of being oriented. 2. Location or position relative to the rains of the compass. 3. Construction of a church so that its longituand axis is from west to east and its main altar at the eastern end. The line or direction followed in the course of a trend, movement, a development 5. A general inclination <a Freudian orientation> Adjustment or adaptation to a new environment, situation, or belet 7. Psychol. Individual awareness of the objective world in its relation to the self. 8. Introductory instruction concerning a new

renteering (ore entiring, on, or) n (Orig a trademark.) cross-country, race in which competitors follow a course through mamiliar territory using a map and compass.

wifice (ore-its, or-) n. [OFr. < Llat. orificium : Lat. os, mouth + th. form, to make.] A mouth or yent or OFENING. —orificial adj. offiamme (or a flam', or) n [ME oriflamble < OFr. oriflambe Med lat quriflamma : Lat. aurum, gold + Lat. flamma, flame.] the ted flag of the Abbey of St. Denis, France, once a royal stanand france 2 An inspiring symbol or standard.

reace. 2. An inspiring symbol or standard. (or) same n. []: ori, a folding +: kami, paper.] The passength of folding paper into representational or decorative

in the property of the origine, ancestry (Lat. origo: origination) or olimination of origination of SOURCE 2. Ancestry : derivation intercannet escape our origins, however hard we try"—James

about the thing the this a deut for urge, y young the sethivision, a about, item, edible, gallop, circus

World War II> 4. Anat. The point of attachment of a muscle. 5. Math. The point of intersection of coordinate axes, as in the Cartesian coordinate system.

* syns: Origin, Derivation, Pountain, Provenance; Prove-NIENCE, ROOT, SOURCE, SPRING, WELL n. core meaning: a point of origination < the origin of Western civilization >

ortigrimal (2-11)'2-nal) adj. [ME «OFt. « Lat: originalis « origo, source « oriri, to rise.] 1. Preceding all others in time: FIRST.
2. a. Not derived from something else. «an original script, not an adaptation > b. Showing a marked departure from previous practice : NEW. < a truly original design > 3. Productive of new things or new ideas: INVENTIVE. 4. Being the source from which a copy, reproduction, or translation is made. —n. 1. A first form from which varieties arise or imitations are made <Newer models are much lighter than the original > 2. An authentic work of art, as distinguished from an imitation or reproduction. 3. One that is the model for a literary or

artistic creation. 4. One that is odd or singular: ECCENTRIC.
originality (2-nij'2-nil'I-te) n., pl. -ties. 1. The quality of being original. 2. Capacity for independent thought or action. 3. Something original.

originally (a-rij'a-na-le) adv. 1. With reference to origin. 2. At first. 3. In a highly distinctive way <originally dressed> original sin n. The condition of sin that marks all human beings

as a result of Adam's first act of disobedience. originate (a-nj'a-nat') -nat-ed, -nat-ing, -nates. -vt. & vi. To

bring or come into being —origination n —originative adj.—originatively adv.—originator n o-ri-na-sal (ôr's-na'zəl, ŏr'-) n. [Lat. ōs, ōr-, mouth + NASAL-] A

speech sound, as a French nasal vowel pronounced with both oral and nasal passages open. —o'ri-na'sal adj...
o-ri-ole (ôr'ē-ōl', ōr'-) n. [Fr. oriol < OFr. < Med. Lat. oriolus < Lat. aureolus, golden < aureus < aurum, gold:] 1. Any of various Old

World birds of the family Oriolidae, having bright yellow and black plumage in the males. 2. Any of various New World birds of the family Icteridae, having black and orange or yellow plumage in the

O-ri-on (ö-ri'ən).n. [Gk. Orion.] 1. Gk. Myth. A giant hunter, pursuer of the Pleiades and lover of Eos; killed by Artemis. 2: A constellation in the celestial equator.

ori-son (ori-son, -zon, or'-) n. [ME orisoun < OFr. oraison < Lat. oratio, speech < orare, to speak.] A prayer.

O-ri-ya (ô-re'yo) n. The Indic language of Orissa; a state in eastern India. Orle-an-ist (ôr le-a-nist) n: A supporter of the Orleans branch of

the French royal family, descended from a younger brother of Louis Orlon (ôr'lon'). A trademark for a synthetic acrylic fiber.

or lop (ôr lop') n. [ME overloper, floor covering a ship's hold < MDu. overloop: over, over + loopen, to leap.] Naut. The lowest deck of a ship, esp. a warship.

Ormazd also Ormuzd (ôrməzd) n. [Pers. Ormazd < Avestan Ahura-Mazda: ahura, spirit + mazda, wise:] The supreme deity of Zoroastrianism, the creator of the world, the source of light, and the embodiment of good.

ormer (or mor) n. [Dial. Fr. < Fr. ormier, short for oreille-de-mer, ear of the sea < Lat. auris maris.] Chiefly Brit. An abalone shell, esp. the shell of an edible species, Haliotis tuberculata, found chiefly in the Channel Islands.

ormo·lu (ôr'mə·loo') n. [Fr. or moulu; ground gold.] 1. A copper and tin or zinc alloy resembling gold in appearance and used to decorate furniture and jewelry. 2. An imitation of gold.

Ormuzd (Armazd) n. var. of ORMAZD. ornament (ôrnamant) n. [ME ournement < Ofr. ornement < Lat. ornamentum < ornare, to embellish.] 1. Something that decorates or adorns: EMBELLISHMENT. 2. One regarded as a source of credit, honor, or pride <an ornament to one's school> 3. Mus. A note or group of notes that embellishes a melody. -vt. (-ment') ment-ed, -ment-ing, -ments. 1. To furnish with ornaments. 2. To be an ornament to, -or na ment'er n.

or-na-men-tal (ôr'na-měn'tl) adj. Of, relating to, or being an ornament. -n. Something ornamental, esp. a plant grown for its beauty. -or'na men'tal·ly adv.

ornamentation (orno-mentashon) n. 1. a. The act or process of ornamenting. b. The state of being ornamented. 2. ORNA-MENT 1. 26, 16, 1

ornate (ôr-nāt') adj. [ME < Lat. ornatus, p.part. of ornare, to embellish.] 1. Elaborately and heavily ornamented. 2. Showy or florid in style or manner: FLOWERY. -ornate'ly adv. -ornate'ness n. # SYNS: ORNATE, BAROQUE, FLAMBOYANT, FLORID, ROCOCO adj. core meaning: elaborately and heavily ornamented <an ornate Ba-

varian palace > ant: austere.

ornery (ôr'nə-rē) adi. -i-er, -i-est. [Alteration of ORDINARY.] Stubborn and ill-tempered ... - 11.64 p. 34.45 ;

ornith- pref. var. of ORNITHO.
ornithic (Ornithik) adj. [Gk. ornithikos < ornis, bird.] Of pertaining to, or characteristic of birds.

orni-thine (ôr'no-thên') n. [E. ornith(uric acid), an acid found in